

**TRANSPORTATION CONCEPT REPORT  
STATE ROUTE 188**

**11-SD-188**

**P.M. 0.0-1.9**

**JANUARY 1992**

**State of California  
Department of Transportation  
District 11 - System Planning Branch  
2829 Juan Street  
P.O. Box 85406  
San Diego, CA 92186-5406**

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## TRANSPORTATION CONCEPT SUMMARY STATE ROUTE 188 11-SD-188 P.M. 0.0 - 1.9

### TRANSPORTATION CONCEPT (2010)

Table S-1 lists components of the Transportation Concept. They are the facility type and the number of lanes for 2010, the Average Daily Traffic (ADT) for 2010, the Volume to Capacity Ratio (V/C) for 2010, the 2010 Operating Level of Service (LOS), the 2010 Transportation Concept LOS, and whether the segment is in the rural or urban area. The 2010 Operating LOS for State Route 188 (SR-188) is based on California Department of Transportation (Caltrans) traffic forecasts and assumes completion of the future regional transportation system. The 2010 Operating LOS includes all proposed State highway and arterial street improvements. The 2010 Transportation Concept LOS is also based on District System Planning LOS guidelines for rural highways.

The Ultimate Transportation Corridor (UTC) describes the long term (beyond 20 year planning period) right of way requirements for SR-188. The UTC proposes the number of lanes, the facility type, and the minimum right of way width in feet. This width can be variable depending upon the dimensions of cross-sectional elements and specific circumstances which may require narrow widths. Minimum right of way width includes the roadbed, shoulder, clear recovery area, and minimum catch point distance to the cut or fill slope. Additional right of way may be required for structures, slope modifications and drainage facilities.

The number of lanes and facility type for the UTC are shown in Table S-1 are based on the San Diego County General Plan Circulation Elements. The minimum right of way width is based on standards promulgated by the Caltrans Design Manual, Section 7-306.1.

**TABLE S-1  
2010 TRANSPORTATION CONCEPT**

<b>Segment/ County Post Mile</b>	<b>Location</b>	<b>No. Lanes/ Facility Type</b>	<b>ADT</b>	<b>V/C Ratio</b>	<b>Operating LOS*</b>	<b>Concept LOS**</b>	<b>Rural/ Urban</b>	<b>UTC/ Width</b>
1 SD 0.0 - 0.1	International Border to Thing Road	4C	15,000	0.54	C	D	R	4C/148
2 SD 0.1 - 0.6	Thing Road to Humphries Road	4C	14,000	0.50	C	D	R	4C/148
3 SD 0.6 - 1.9	Humphries Road to SR-94	4C	10,000	0.36	B	D	R	4C/148

4C = Four lane conventional highway

ADT = Average Daily Traffic

LOS = Level of Service

R = Rural

UTC = Ultimate Transportation Corridor

V/C = Volume to Capacity

\* Operating LOS includes provision of State highway and arterial improvements.

\*\* Concept LOS is based on District System Planning LOS guidelines for rural areas.

Note: Widths are in feet.

## CONCEPT RATIONALE

Caltrans traffic forecasts indicate that without capacity improvements, significant levels of congestion will occur along the SR-188 corridor. In order to provide improved LOS, the Transportation Concept is to widen SR-188 to a four lane conventional highway where sufficient right of way can be made available and where it can be completed at a reasonable cost. Arterial street improvements such as additional lanes, preferential signal treatment, limitation and separation of left turn movements, limited driveways and other access control should also be provided where necessary as an additional component of the Transportation Concept.

The signalization of SR-188 at both Thing Road and Humphries Road, is recommended to prevent these intersections from operating at a deficient LOS. The Transportation Concept includes the provision of additional Transportation Control Measures (TCMs) and Transportation System Management (TSM) improvements to help accommodate the increased traffic on SR-94 as a result of increased growth along the SR-188 corridor.

For all segments, operational and safety improvements should be considered where needed.

## EXISTING AND FUTURE (2010 NO BUILD) DEFICIENCIES

Table S-2 shows existing and future (2010 No Build) operating conditions for SR-188, for the purpose of highlighting deficient segments. Existing conditions reflect 1990 data and are also shown graphically on the summary map page. Future conditions assume only the completion of those projects in the 1990 State Transportation Improvement Program (STIP). Concerns include segments where either deficient operating LOS or where actual accident rates exceed the expected rates on similar facilities by one and one-half times.

**TABLE S-2  
EXISTING AND FUTURE (2010 NO BUILD) DEFICIENCIES**

Segment/ County Post Mile	No. Lanes/ Facility Type	ADT	V/C Ratio	Operating LOS	Concern
<b>Existing (1990)</b>					
1 SD 0.0 - 0.1	2C	4,150	0.33	B	Accident rates
2 SD 0.1 - 0.6	2C	3,800	0.33	B	Not Deficient
3 SD 0.6 - 1.9	2C	2,600	0.22	B	Accident rates
<b>Future (2010 Post 1990 STIP No Build)</b>					
1 SD 0.0 - 0.1	4C	15,000	1.28	F	International Border traffic/Deficient LOS F
2 SD 0.1 - 0.6	4C	14,000	1.20	F	International Border traffic/Deficient LOS F
3 SD 0.6 - 1.9	4C	10,000	0.86	E	International Border traffic/Deficient LOS E

2C = Two lane conventional highway  
 4C = Four lane conventional highway  
 ADT = Average Daily Traffic  
 LOS = Level of Service  
 STIP = State Transportation Improvement Program  
 V/C = Volume to Capacity

Source: Caltrans

## 2010 TRANSPORTATION CONCEPT FACILITY IMPROVEMENTS

Table S-3 shows facility improvements to SR-188 being proposed to attain the 2010 Transportation Concept. Operational and safety improvement projects should be implemented as needed. These improvements are also shown on the following summary map page.

**TABLE S-3**  
**2010 TRANSPORTATION CONCEPT FACILITY IMPROVEMENTS**

<b>Segment/ County Post Mile</b>	<b>Improvement Description</b>	<b>V/C Ratio</b>	<b>Operating LOS*</b>	<b>Concept LOS**</b>
1 SD 0.0 - 0.1	Add two lanes	0.54	C	D
2 SD 0.1 - 0.6	Add two lanes	0.50	C	D
3 SD 0.6 - 1.9	Add two lanes	0.36	B	D

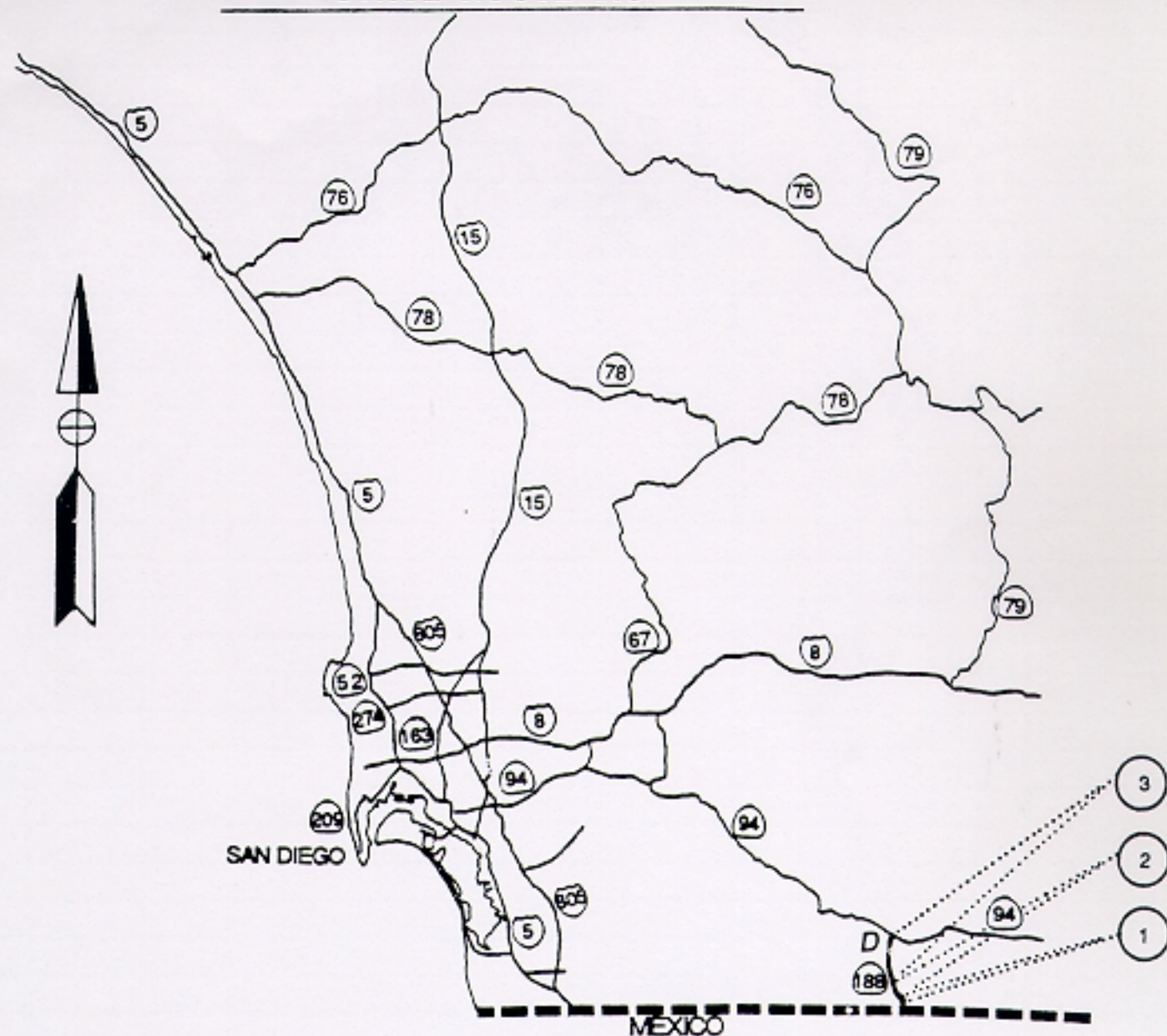
LOS = Level of Service

V/C = Volume to Capacity

\* Operating LOS includes provision of State highway and arterial improvements.

\*\* Concept LOS is based on District System Planning LOS guidelines for rural areas.

# DISTRICT 11 TRANSPORTATION CONCEPT REPORT MAP STATE ROUTE 188



## 2010 TRANSPORTATION CONCEPT FACILITY IMPROVEMENTS

Segment	County/ Post-Mile	Location	Improvement Description
1	SD 0.0-0.1	International Border to Thing Road	Add two lanes
2	SD 0.1-0.6	Thing Road to Humphries Road	Add two lanes
3	SD 0.6-1.9	Humphries Road to SR-94	Add two lanes

Letters shown are Concept Level of Service

**TRANSPORTATION CONCEPT REPORT  
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**INTRODUCTION AND STATEMENT OF PLANNING INTENT**

The system planning process consists of three products: the District System Management Plan (DSMP), the Transportation Development Plan (TDP), and the Transportation Concept Report (TCR).

The DSMP is a strategic and policy planning documents that describes how the District envisions the transportation system will be maintained, managed and developed over the next 20 years and beyond. The DSMP is developed in partnership with regional and local transportation planning agencies. It describes the overall goals and policies which relate to District transportation issues. The goals and policies consider the entire transportation system, regardless of jurisdiction, and addresses all modes which move people, goods, and services. The DSMP summarizes 20 year planning concepts and proposed transportation improvements on a systemwide level, and influences the development of future transportation concepts and development plans.

The TDP identifies transportation corridor improvements for the five year period following the seven year State Transportation Improvement Program (STIP). The TDP analyzes proposed system improvements in terms of two funding scenarios, timing, local and regional priorities, interregional travel and system continuity. Together, the STIP and the TDP constitute the first 12 years of the 20 year planning period and act as a benchmark for measuring progress toward attainment of the 20 year concept.

The TCR is a planning document which describes the Department's basic approach to the development of a given corridor. Considering reasonable financial constraints and projected travel demand, the TCR establishes a 20 year transportation planning concept and identifies modal transportation options needed to achieve the concept. The concept considers operating levels of service (LOS), modal facility types, and vehicle occupancy. The TCR also considers potential long term needs for the route beyond the 20 year planning period. The long term needs focus on corridor preservation, the Ultimate Transportation Corridor (UTC) and new technologies. Minimum right of way widths are also established in the UTC for all conventional highway portions of the transportation system.

The TCR is a preliminary planning phase that leads to subsequent programming and the project development process. As such, the specific proposed nature of improvements (i.e., number of lanes, access control, etc.) may change in later project development stages, with final determinations made during the project report and design phases.

Each TCR must be viewed as an integral part of a planned system. The TCR is based on the completion of the 20 year system. The system has been developed to meet



anticipated travel demand generated from regional growth forecasts. Removal of any portion of a route from the system will adversely affect travel on parallel or intersecting routes.

The TCR is prepared by Caltrans District staff in cooperation with local and regional agencies. The TCR will be updated as necessary as conditions change or new information is obtained.

## **ROUTE DESCRIPTION**

State Route 188 (SR-188), a two lane conventional highway, begins at the United States/Mexico International Border at Tecate. The route travels north 1.9 miles to its terminus at SR-94 (PM SD-94-39.0). SR-188 was adopted into the State highway system in 1972.

### **Purpose of Route**

SR-188 is a south-north facility connecting the United States Border Crossing at Tecate to SR-94 (PM SD 39.0), in the southeastern portion of San Diego County. The Otay Mesa and San Diego Border Crossings are located approximately 20 miles west of the Tecate Border Crossing, and the Calexico Border Crossing is located approximately 70 miles east of the Tecate Border Crossing. The Algodones Border Crossing lies further east of Calexico near the Arizona State line. SR-188 serves international and interregional (via SR-94) commute, commercial and recreational travel patterns.

### **Existing Facility Classifications**

The functional classification for SR-188 is Minor Arterial. SR-188 is included in the Federal Aid System (FAS) and is classified as Federal Aid Primary (FAP). Table 1 shows the functional classification for each segment of the route. Although SR-188 is not designated at present as part of the Highways of National Significance (HNS), it is being proposed by Caltrans for inclusion in the future Federal System as part of the HNS system.

SR-188 is not included in the Interregional Road System (IRRS), and is not designated as part of the national network for Surface Transportation Assistance Act (STAA) for trucks or the Subsystem of Highways for the Movement of Extra Legal Permit Loads (SHELL). In accordance with the Truck Kingpin-to-Rear Axle Length State Highway System Evaluation Report dated December 1989, the portion of SR-188 from Humphries Road to SR-94 (PM SD 0.6 - 1.9) has been identified as geometrically inadequate for use by truck tractor-semitrailer combinations having a 40 foot kingpin-to-rear axle length.

For maintenance programming purposes, the State highway system has been classified as Class 1, 2, and 3 highways based on the Maintenance Service Level (MSL) descriptive definitions. MSL 1 contains route segments functionally classified as rural Principal Arterials (PAs) and their urban extensions (PIP). MSL 2 contains route segments

classified as PAs not in MSL 1, route segments functionally classified as minor arterials not in MSL 3, and route segments with a Transportation Concept of Maintain and Improve. MSL 3 indicates a route or route segment with the lowest maintenance priority. Typically, MSL 3 contains route segments with a Transportation Concept of Maintain Only, route segments functionally classified as collectors and local roads, route segments with relatively low traffic volumes and route segments being considered for relinquishment, rescission, or where a new alignment will replace the existing facility. Furthermore, route segments where the District does not anticipate spending money and route segments where route continuity is necessary are also assigned an MSL 3 designation.

SR-188 is classified as a MSL 2 route for its entire length.

## Route Segments

SR-188 will be examined in three segments for traffic analysis purposes. Table 1 lists the segments for this route and includes some of the information used as criteria for segment divisions. A map is attached at the end of this report which indicates the location and post miles of the segments used in this analysis.

**TABLE 1  
ROUTE SEGMENTATION**

<b>Segment/ County Post Mile</b>	<b>Location</b>	<b>No. Lanes/ Facility Type</b>	<b>Rural/ Urban</b>	<b>Functional Classification</b>
1 SD 0.0 - 0.1	International Border to Thing Road	2/Conventional	R	Minor Arterial
2 SD 0.1 - 0.6	Thing Road to Humphries Road	2/Conventional	R	Minor Arterial
3 SD 0.6 - 1.9	Humphries Road to SR-94	2/Conventional	R	Minor Arterial

R = Rural

## Existing Facility

A physical description of the existing street system in a segment-specific format is shown in Table 2.

**TABLE 2  
EXISTING FACILITY**

Segment/ County Post Mile	No. Lanes/ Facility Type	Shoulder Width	R/W Width	Median Width	Grade Line
1 SD 0.0 - 0.1	2C @ 12	8	80	0	R
2 SD 0.1 - 0.6	2C @ 11	6	80	0	R
3 SD 0.6 - 1.9	2C @ 12	1	80	0	R

2C = Two lane conventional highway

R = Rolling

R/W = Right of Way

Note: Widths are in feet.

There are two rural roads to the east that parallel SR-188. They provide an alternative route for commuter and commercial traffic. These two roads are Emery Road and Plaskon Lane. Emery Road runs parallel to SR-188 between Thing Road and SR-94. Plaskon Lane also runs parallel to SR-188 between Emery Road and SR-94.

Park and ride lots are nonexistent along the SR-188 corridor. The closest park and ride lot is two and one-half miles east of SR-188 on SR-94 at the Potrero Post Office. There are 10 available parking spaces. This park and ride lot operates under contract agreement with a private party.

Transit service is provided by County Transit System via SR-94. Rural bus route 894 provides one round trip Monday through Saturday from Tecate to El Cajon. Transfer and connecting buses are available at Parkway Plaza and the El Cajon Transit Center. Prearranged transfers to the Wheels/Elderly and Disabled service transit system are also available at these locations. Rural bus route 894 also provides access to the East Urban Light Rail Line at the Grossmont Light Rail Station and also at the El Cajon Transit Center. Furthermore, the rural buses are equipped with bicycle racks and provide wheelchair lift service.

## **ROUTE ANALYSIS**

This section further discusses existing conditions and introduces future Post-1990 STIP/No Build conditions and deficiencies for SR-188. It also includes a land use and population analysis for existing and future conditions in this corridor.

### **Existing and Future (2010 No Build) Operating Conditions**

Table 3 shows existing and future operating conditions for SR-188. Existing conditions reflect 1990 data. The future conditions are based on the California Department of Transportation (Caltrans) traffic forecasts. Future conditions also assume the completion of only those projects in the 1990 STIP.

**TABLE 3**  
**EXISTING AND FUTURE (2010 NO BUILD) OPERATING CONDITIONS**

<b>Segment/ County Post Mile</b>	<b>Year</b>	<b>No. Lanes/ Facility Type</b>	<b>ADT</b>	<b>V/C Ratio</b>	<b>Operating LOS</b>
1 SD 0.0 - 0.1	1990	2C	4,150	0.35	B
	2000	2C	8,500	0.73	D
	2010	2C	15,000	1.28	F
2 SD 0.1 - 0.6	1990	2C	3,800	0.32	B
	2000	2C	7,800	0.67	D
	2010	2C	14,000	1.20	F
3 SD 0.6 - 1.9	1990	2C	2,600	0.22	B
	2000	2C	5,600	0.48	C
	2010	2C	10,000	0.86	E

2C = Two lane conventional highway

ADT = Average Daily Traffic

LOS = Level of Service

V/C = Volume to Capacity

Source: Caltrans

Average accident data for the three year period from January 1, 1988 to January 1, 1991 is listed below in Table 4. The table includes only segments where actual rates exceed the expected rates on similar facilities by one and one-half times.

**TABLE 4**  
**ACCIDENTS PER MILLION VEHICLE MILES**

Segment	Actual Total	Expected Total
1	16.69	2.14
3	4.7	2.17

Source: Traffic Accidents Surveillance and Analysis System

### Existing and Future (2010 No Build) Deficiencies

Table 5 shows existing and future (2010 No Build) operating conditions for SR-188 to highlight existing and future deficiencies. Existing conditions reflect 1990 data. Future no build conditions assume completion of only those projects in the 1990 STIP. The future conditions are based on Caltrans traffic forecasts. Deficient conditions are defined as an LOS worse than either the Transportation Concept LOS or LOS "D," or accident rates greater than one and one-half times the expected total.

**TABLE 5**  
**EXISTING AND FUTURE (2010 NO BUILD) DEFICIENCIES**

Segment/ County Post Mile	No. Lanes/ Facility Type	ADT	V/C Ratio	Operating LOS	Concern
<b>Existing (1990)</b>					
1 SD 0.0 - 0.1	2C	4,150	0.33	B	Accident Rates
2 SD 0.1 - 0.6	2C	3,800	0.33	B	Not Deficient
3 SD 0.6 - 1.9	2C	2,600	0.22	B	Accident Rates
<b>Future (2010 Post 1990 STIP No Build)</b>					
1 SD 0.0 - 0.1	4C	15,000	1.28	F	International Border traffic/Deficient LOS F
2 SD 0.1 - 0.6	4C	14,000	1.20	F	International Border traffic/Deficient LOS F
3 SD 0.6 - 1.9	4C	10,000	0.86	E	International Border traffic/Deficient LOS E

2C = Two lane conventional highway

4C = Four lane conventional highway

ADT = Average Daily Traffic

LOS = Level of Service

STIP = State Transportation Improvement Program

V/C Volume to Capacity

Source: Caltrans

### Land Use

The San Diego Association of Governments (SANDAG) Series 7 Regional Population and Employment Forecast projects an increase in population in the San Diego Region

from 2.3 million people in 1988 to 3.15 million people by 2010. This represents a 37 percent increase in population for the region. Furthermore, the SANDAG Series 7 forecast projects an increase in population for the Jamul Subregional Population Statistical area (which contains the SR-188 corridor) to 13,000 people by 2010. In 1989, SANDAG estimated the area to have a population of 8,500. This represents a 53 percent increase in population for the subregion. This rapid increase in population will create a demand for additional housing, employment, and public facilities, all of which will have a significant impact on future land use decisions and transportation facility improvements.

SR-188 travels through rolling hills and a small valley before connecting with SR-94. The land uses surrounding the SR-188 corridor include residential (low density - one dwelling unit per one, two, three, or four acres), general commercial and light industrial.

The community of Tecate, California is served by SR-188. According to the San Diego County General Plan, Tecate is designated as a Country Town and is characterized by rural residential, commercial, and basic industrial land uses. Tecate's population is approximately 100. Historically, Tecate, California, has experienced slow but steady population and employment growth. This growth rate is expected to significantly increase upon the formation of the Tecate California Water District (which is currently pending approval from the County of San Diego).

Directly south of Tecate, California across the International Border, lies Tecate, Mexico, a thriving and growing city with an estimated population of 70,000. The economy of the Mexican City of Tecate has recently been strongly stimulated by the development of maquiladora industrial plants (plants that provide labor-intensive manufacturing services for U.S.-based industries). The economy of Tecate, Mexico is growing and growth is expected to continue in the future. In fact, Mexico is providing infrastructure to entice development to the surrounding area. A toll road from Otay Mesa to Tecate (on the Mexico side of the border) has been constructed. A relatively large volume of commercial truck traffic, approximately eight percent of Average Daily Traffic (ADT), utilizes the Tecate border crossing, having a significant impact on traffic flow on SR-188. The United States Immigration and Naturalization Service is proposing to construct a new border crossing in Tecate westerly of the current location. The new crossing will include four primary vehicle inspection lanes and 12 secondary inspection lanes.

A new Port of Entry (POE) at Tecate is being planned which will provide for four primary vehicle inspection lanes, and 12 secondary inspection spaces. The new facility will also include a main building, a commercial import and export dock, a dog kennel, an impound lot, and employee and visitor parking. The Tecate POE is pending completion of a Master Plan and site location.

The eastern portion of San Diego County has been experiencing increasing growth in employment. Table 6 lists employment growth statistics for East County.

**TABLE 6  
EMPLOYMENT GROWTH**

<b>Area</b>	<b>1986</b>	<b>2010</b>	<b>Percent Change From Base Year</b>
East County	3,800	5,400	42.1

Source: The San Diego Association of Governments (SANDAG)

Table 7 lists current and future housing and population data for the area adjacent to SR-188 in San Diego County.

**TABLE 7  
HOUSING AND POPULATION GROWTH**

<b>Location</b>	<b>Year</b>	<b>Dwelling Units</b>	<b>Percent Change From Base Year</b>	<b>Population</b>	<b>Percent Change From Base Year</b>
Tecate	1980	48	-	89	-
	1985	48	0	96	7.9
	1990	56	16.7	110	23.6
	2005	-	-	224	151.7
Potrero	1980	262	-	477	-
	1985	263	0.4	514	7.8
	1990	301	14.9	588	23.3
	2000	338	29.0	661	38.6
Campo/Lake Morena	1980	747	-	1,590	-
	1985	759	1.6	1,814	7.8
	1990	884	18.3	1,959	23.2
	2000	1,008	34.9	2,202	38.5
Boulevard	1980	444	-	810	-
	1985	447	0.8	873	7.8
	1990	510	14.9	998	23.3
	2000	547	29.3	1,122	38.5
Jacumba	1980	344	-	628	-
	1985	347	0.9	677	7.8
	1990	396	15.1	774	23.2
	2000	442	28.5	870	38.5

Source: San Diego County Department of Land Use Planning

Additional traffic generators in the area adjacent to SR-188 could significantly increase congestion on area surface streets, and the State highway. Proposed major developments that will generate at least 5,000 trips and significantly impact traffic on SR-188 are shown in Table 8.

**TABLE 8  
TRIP INDUCING MAJOR DEVELOPMENT PROJECTS**

<b>Proposed Development</b>	<b>Dwelling Units</b>	<b>Square Footage</b>	<b>Acreage</b>	<b>Trips Generated Daily</b>
Dawson Industrial Park	-	-	47.7	5,724
Tecate Water District	-	-	488.0	15,000*

\* Once the Water District is formed and water is provided, new developments within the District will generate this additional traffic.

Source: Caltrans Planning Studies Branch

## **TRANSPORTATION CONCEPT (2010)**

A Transportation Concept is composed of two parts: 1) a minimum tolerable LOS for the peak hours, 2) a description of the physical facility necessary to accommodate that LOS.

The 2010 Transportation Concept is determined by a detailed analysis of each route. Factors that are influential in the selection process include land use, terrain, travel characteristics, relative importance of the route, relationship to other routes, urban or rural areas, political acceptance, functional classification, ADT, safety, and cost of improvements. Additional components of the Transportation Concept include the future implementation of intermodal, Transportation System Management (TSM), and Transportation Control Measures (TCM) Air Quality improvement tactics. These items are discussed in subsequent sections of this report. The 2010 Transportation Concepts have been approved by District management and reflect a reasonable expectation of accomplishment rather than unattainable aspirations.

In the rural areas of San Diego County, the Transportation Concept is set at LOS D for nonfreeway segments.

Table 9 shows the specific Transportation Concept facility type and Transportation Concept LOS for SR-188. The 2010 Operating LOS is based on Caltrans traffic forecasts.

The post-2010 UTC describes the future right of way requirements in terms of the facility type and the number of lanes that may be needed to accommodate corridor trips beyond the year 2010.

**TABLE 9**  
**2010 TRANSPORTATION CONCEPT**

<b>Segment/ County Post Mile</b>	<b>Location</b>	<b>No. Lanes/ Facility Type</b>	<b>ADT</b>	<b>V/C Ratio</b>	<b>Operating LOS*</b>	<b>Concept LOS**</b>	<b>Rural/ Urban</b>	<b>UTC/ Width</b>
1 SD 0.0 - 0.1	International Border to Thing Road	4C	15,000	0.54	C	D	R	4C/148
2 SD 0.1 - 0.6	Thing Road to Humphries Road	4C	14,000	0.50	C	D	R	4C/148
3 SD 0.6 - 1.9	Humphries Road to SR-94	4C	10,000	0.36	B	D	R	4C/148



4C = Four lane conventional highway

ADT = Average Daily Traffic

LOS = Level of Service

R = Rural

V/C = Volume to Capacity

\* Operating LOS includes provision of State highway and arterial improvements.

\*\* Concept LOS is based on District System Planning LOS guidelines for rural areas.

Note: Widths are in feet.

## **CONCEPT RATIONALE**

Caltrans traffic forecasts indicate that without capacity improvements, significant levels of congestion will occur along the SR-188 corridor. In order to provide improved LOS, the Transportation Concept is to widen SR-188 to a four lane conventional highway where sufficient right of way is available and where it can be completed at a reasonable cost. Furthermore, the signalization of Thing Road at SR-188 and Humphries Road at SR-188 is recommended to prevent these intersections from operating at a deficient level. Adding additional highway capacity and traffic signalization will be sufficient to lessen congestion to reasonable and acceptable levels.

In instances where capacity improvements are sufficient to reduce congestion, TSM and TCM strategies are not always necessary. However, the SR-188 and SR-94 intersection is a unique situation where the proposed four lane conventional highway (SR-188) will funnel into a two lane conventional highway (SR-94). The Post-2010 UTC for SR-94, according to the San Diego County Circulation Element, is a four lane conventional highway. However, since these improvements are a long way off, TCM Air Quality strategies will be recommended as a method to mitigate congestion on SR-94 that is caused or magnified by SR-188.

## **AIR QUALITY**

Because the region has not met State and federal air quality standards, it is classified as a "severe" air basin, and the 1988 California Clean Air Act requires the development of a new air quality plan. The Air Pollution Control District (APCD) is mandated to complete the plan in early 1992. The plan will incorporate strategies directed at reducing emissions and increasing vehicle occupancy in an effort for the region to achieve the State's standards.

As part of this plan, SANDAG has developed strategies towards attainment of the plan's goals. These strategies are called TCMs. The preliminary TCMs (February 1991) are comprised of the following programs: Transportation Demand Management (TDM), Transportation Capacity Expansion, TSM, and Indirect Source Control programs.

The TDM program consists of three elements. The first element is the Commute Travel Reduction Program. It is composed of eight sub-elements.

An important sub-element as it relates to congestion relief is the Employment Trip Reduction Program and Ordinance. The goal of this program is to reduce transportation source emissions by increasing the average number of persons per vehicle during peak weekday periods from the existing 1.15 rate to a 1.5 rate by 1999.

The second element in the TDM program is the College Travel Reduction Program. The objectives of the Program are to achieve an average vehicle occupancy for colleges of 1.5 by the year 2000, and 1.6 by the year 2010.

The third element in the TDM program is the Goods Movement/Truck Operation Control Program. An important sub-element as it relates to congestion relief is the provision of the Motorist Information System. Consistent with the goals of the sub-element, the District 11 Long Range Operations Plan (LROP) proposed a Traffic Operations Center (TOC) which is now in operation.

The second major TCM program is the Transportation Capacity Expansion Program. The purpose of the Transportation Capacity Expansion Program is to support the TDM Program by providing those services and facilities for the success of the TDM Program.

The third major TCM program is the TSM Program. The goal of the TSM Program is to improve the flow of traffic through the coordination of traffic signals and computerized signal controls and to achieve a 10 percent increase in speed on arterial streets by the year 2000. The LROP recommends that a plan be prepared for the systematic review of all signalized intersections on State highways. This plan will include a discussion of signalized local parallel routes.

The fourth major TCM program is the Indirect Source Control Program. It is composed of two elements. The first element is the General Travel Reduction Program. It specifically aims at reducing noncommute travel by single occupant vehicles to an indirect source.

The second element of the Indirect Source Control Program is the Land Use Program. The Land Use Program is designed to use zoning and design tools in an effort to foster the use of alternative transportation modes.

## **ALTERNATIVE CONCEPTS CONSIDERED**

The purpose of this section is to document alternative future facility planning proposals that were considered. The 1992 Transportation Concept for the year 2010 is compared with the original 1985 Route Concept Report (RCR) for the year 2005, the 1990 Regional Transportation Plan (RTP) and the County of San Diego General Plan.

In the 1985 RCR, the Route Concept was based on the 2005 traffic forecasts. Due to proposed employment growth and changing travel patterns between the United States and Mexico, the original Route Concept for SR-188 has been revised to reflect increased traffic forecasts.

Table 10 is comprised of a comparison between the 1985 RCR and this current updated TCR.

**TABLE 10  
COMPARISON OF 2005 AND 2010 CONCEPTS**

<b>1985 Route Concept for 2005</b>		<b>1992 Transportation Concept for 2010</b>	
<b>Segment/ County Post Mile</b>	<b>No. Lanes/ Facility Type/ Concept LOS</b>	<b>Segment/ County Post Mile</b>	<b>No. Lanes/ Facility Type/ Concept LOS</b>
1 SD 0.0 - 1.9	2C/C	1 SD 0.0 - 0.1	4C/D
		2 SD 0.1 - 0.6	4C/D
		3 SD 0.6 - 1.9	4C/D

2C = Two lane conventional highway

4C = Four lane conventional highway

LOS = Level of Service

## **2010 TRANSPORTATION CONCEPT FACILITY IMPROVEMENTS**

On some routes, it is not always possible to attain the 2010 Transportation Concept by the provision of physical improvements to the facility. Fortunately, on SR-188, physical improvements to the facility will be sufficient to achieve the Transportation Concept. Table 11 displays the mainlane facility improvements that are proposed for attaining the Transportation Concept. The Volume to Capacity (V/C) Ratio and Operating LOS listed assume completion of the proposed improvements. Operational and safety improvements should be implemented as needed.

**TABLE 11  
2010 TRANSPORTATION CONCEPT FACILITY IMPROVEMENTS**

<b>Segment/ County Post Mile</b>	<b>Improvement Description</b>	<b>V/C Ratio</b>	<b>Operating LOS*</b>	<b>Concept LOS**</b>
1 SD 0.0 - 0.1	Add two lanes	0.54	C	D
2 SD 0.1 - 0.6	Add two lanes	0.50	C	D
3 SD 0.6 - 1.9	Add two lanes	0.36	B	D

LOS = Level of Service

V/C = Volume to Capacity

\* Operating LOS includes provision of State highway and arterial improvements.

\*\* Concept LOS is based on District System Planning LOS guidelines for rural areas.

## **ULTIMATE TRANSPORTATION CORRIDOR**

The UTC describes the long term (beyond the 20 year planning period) right of way requirements for a particular segment. The long term needs are determined by Advanced Transportation System Development (ATSD) activities which include investigation and analysis of Community Plans, General Plans, Transportation Plans, Land Use Plans, Environmental Documents, and other planning documents. The intent is to take advantage of or develop opportunities for long term right of way acquisition and to work with local and regional agencies to implement corridor preservation measures. The UTC proposes the number of lanes, the facility type, and the minimum right of way width in feet for the conventional highway portions of the route. This width can be variable depending upon the dimensions of cross-sectional elements and specific circumstances which may require narrow widths. Minimum right of way width includes the roadbed, shoulder, clear recovery area, and minimum catch point distance to the cut or fill slope. Additional right of way may be required for structures, slope modifications and drainage facilities.

For SR-188, the UTC is the same as the Transportation Concept, a four lane facility with a 148 foot minimum right of way width that includes bike lanes and improved shoulders. The UTC's number of lanes and facility type are based on the San Diego County General Plan Circulation Element. The minimum right of way width is based on standards promulgated by Caltrans Design Manual Section 7-306.1.

## LIST OF SYSTEM PLANNING ACRONYMS

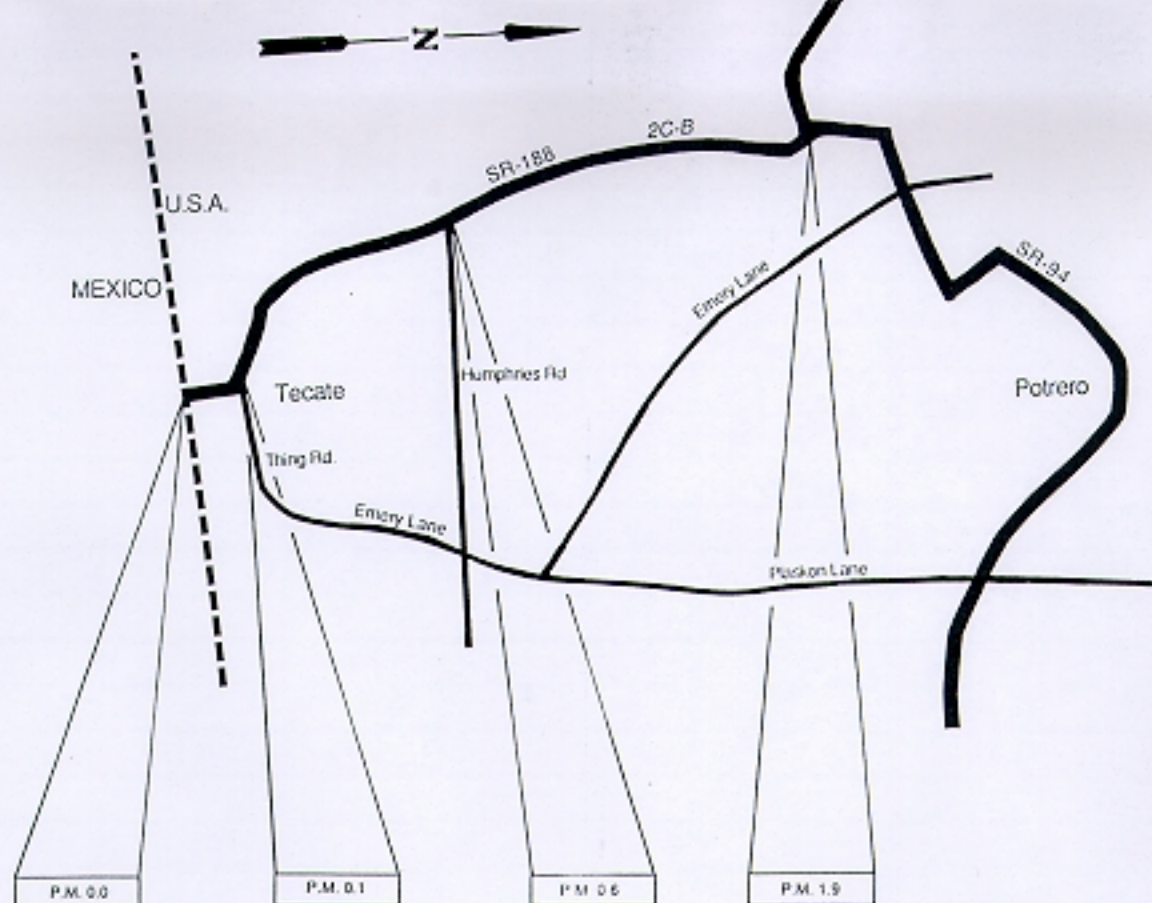
ADT	Average Weekday Traffic
APCD	Air Pollution Control District
ATSD	Advanced Transportation System Development
CMP	Congestion Management Plan
CTC	California Transportation Commission
DSMP	District System Management Plan
FAI	Federal Aid Interstate
FAP	Federal Aid Primary
FAS	Federal Aid Secondary
FAU	Federal Aid Urban
HOV	High Occupancy Vehicle
IRRS	Interregional Road System
LOS	Level of Service
LROP	Long Range Operations Plan
LRT	Light Rail Transit
MSL	Maintenance Service Level
MTDB	Metropolitan Transit Development Board
PHV	Peak Hour Volume
P.M.	Post Mile
RCR	Route Concept Report
RTP	Regional Transportation Plan
R/W	Right of Way
SANDAG	San Diego Association of Governments
SHELL	Subsystem of Highways for the Movement of Extra Legal Permit Loads
STAA	Surface Transportation Assistance Act
STIP	State Transportation Improvement Program
TASAS	Traffic Accident Surveillance and Analysis System
TCM	Transportation Control Measures
TCR	Transportation Concept Report
TDM	Transportation Demand Management
TMA	Transportation Management Association
TOC	Traffic Operations Center
TSM	Transportation Systems Management
UTC	Ultimate Transportation Corridor
V/C	Volume to Capacity

SMART CORRIDOR (Author's Definition) Employs technology to improve the operating efficiency of all the roadways within a corridor in order to reduce congestion.

## LEVEL OF SERVICE DEFINITIONS

The concept of Level of Service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. An LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort and convenience, and safety. LOS definitions can generally be categorized as follows:

<u>LOS</u>	<u>D/C</u>	<u>Congestion/Delay</u>	<u>Traffic Description</u>
		<i>(Used for conventional highways)</i>	
"B"	0.00-0.45	None	Free to stable flow, light to moderate volumes.
"C"	0.46-0.65	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.66-0.85	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.86-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
F	>1.00	Considerable	Forced or breakdown flow Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.



# ROUTE SEGMENTATION STATE ROUTE 188 SAN DIEGO COUNTY

## Legend

2C-B

- 2 = Number of lanes
- C = Existing facility type (conventional highway)
- B = Current level of service

Map not drawn to scale.

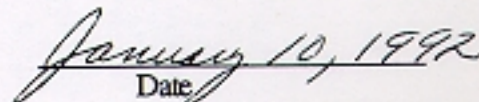


State Route 188

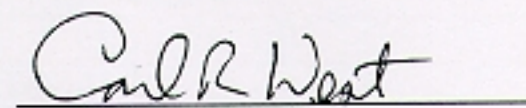
I approve this Transportation Concept Report as the guide for development of State Route 188 over the next 20 years.

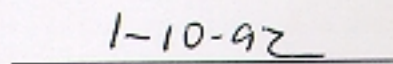
Submitted By:

  
CAROL BOLAND, Chief  
System Planning Branch

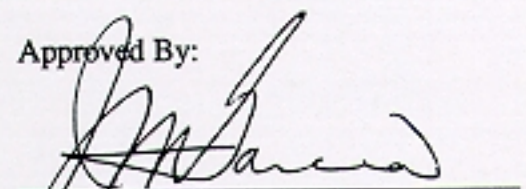
  
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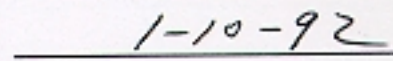
Recommended By:

  
CARL R. WEST  
Deputy District Director  
Planning and Public Transportation

  
Date

Approved By:

  
JESUS GARCIA  
District Director

  
Date